

Advanced Genomic Technology Development Meeting Agenda

Wednesday, May 29 – Grantee Meeting Day 1

7:30 AM	Breakfast, Registration and Poster Setup		
8:30 AM	Welcome		Mike Smith and Carolyn Hutter (NHGRI)
	Genome Tech Awards		Chair: Lisa Chadwick (NHGRI)
8:50 AM	Bradley Berstein	Single-cell and single-molecule detection of epigenetic modifications	
9:07 AM	Feng Zhang	Exploration of microbial diversity for genome editing and beyond	
9:24 AM	Jason Buenrostro	Imaging and sequencing the epigenome in situ	
9:41 AM	Joshua Weinstein	Spatio-genetic imaging with DNA microscopy (Regev)	
9:58 AM	Luca Mariani	Surveying transcription factors for pioneer binding specificity to nucleosomal DNA (Bulyk)	
10:15 AM	Break		
10:45 AM	First Discussion: Collaborations		Moderators: Stirling Churchman, Joseph Ecker, Chongyuan Luo, Karine Choquet
11:45 AM	Lightning Poster Preview: Feldman (40), Carlson (pg. 39), Craig (28), Dell (30), Drndic (18), Hao (36), Kock (15), Le (41), Mulroney (24), Noakes (29), Pavlenok (19), Payne (12), Poodari (25), Razaghi (21), Sadowski (22), Singh (42), Stephenson (37), Tobar (32), Vo (26) & Yu (34)		Chair: Meni Wanunu
12:10 PM	Lunch		Location: Main meeting room
1:00 PM	Poster Session		
	New Sequencing Tech Awards		Chair: Jakob Buchheim
2:00 PM	Marija Drndic	DNA Sequencing with 2D FET-nanopore devices	
2:10 PM	Michael Niederweis	Single-chain MspA for nanopore sequencing of DNA	
2:20 PM	Winston Timp	Using nanopore sequencing to interrogate the genome and epigenome	
2:30 PM	Group Photo and Break		
	Genome & Sequencing Tech Awards		Chair: Andrew Laszlo
3:15 PM	Mark Akeson	Nanopore sequencing of human RNA: Baseline performance and optimization strategies	
3:32 PM	Jens Gundlach	Towards high-accuracy nanopore sequencing	
3:49 PM	Murugappan Muthukumar	Computational design engine for accurate and efficient sequencing of DNA and RNA	
4:06 PM	Henk Postma	Improving read length, accuracy, and availability of single-molecule DNA sequencing	
4:23 PM	Sanggu Kim	Ultra-high-accuracy nanopore target-sequencing for innovations in HIV diagnosis and surveillance	
4:40 PM	Rob Mitra	Simultaneous analysis of transcription factor binding and mRNA expression in single cells	
4:57 PM	Peter Smibert	Highly multimodal measurements of single cells	
5:14 PM	Paul Blainey	Pooled optical screening	
5:31 PM	Northeastern Reception Heavy hors d'oeuvres		Location: Main meeting room

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Thursday, May 30 – *Grantee Meeting Day 2*

7:30 AM	Breakfast		
8:25 AM	Introduction to the Day		Mike Smith (NHGRI)
	Sequencing Tech Awards		Chair: Kristin Gabriel
8:30 AM	Meni Wanunu	Porous Zero-Mode Waveguides for pg-level RNA and DNA Sequencing	
8:47 AM	Winston Timp	Direct nanopore detection of modified RNA to probe structure and dynamics	
9:04 AM	Shenglong Zhang	A general LC/MS-based RNA sequencing method for direct analysis of multiple-base modifications in synthetic and biological RNAs at single-base resolution	
9:21 AM	Steve Tung	Maximizing spatial resolution of DNA sequencing using single carbon chain	
9:38 AM	Stuart Lindsay	Towards single-molecule RNA sequencing by Recognition Tunneling and a new approach	
10:00 AM	Break		
10:30 AM	Second Discussion: Grantsmanship		Moderators: Mary Jelinek, Prashant Mali, Fei Chen
11:30 AM	Lightning Poster Preview: Briggs (pg. 75), Charron (76), Dapprich (77), Kanavarioti (78), Liu (79), Maryanski (80), McDonald (58), Niedzwiecki (82), Perez (83), Trotta (84), Waugh (85), Zhang (46) & Zhang (50)		Chair: Meni Wanunu
12:00 PM	Lunch		Location: Main meeting room
1:00 PM	Poster Session		
	New Genome & Sequencing Awards		Chair: Jyoti Mahalik
2:00 PM	Julia Zeitlinger	A transposase system for integrative ChIP-exo and ATAC-seq analysis	
2:10 PM	Mary Anne Jelinek	High-throughput, multiplexed methods for the epigenomic characterization of human disease states	
2:20 PM	Bruce Seligmann	Direct measurement of m1A methylated RNA using the Tempo-Seq targeted gene expression assay	
2:30 PM	Eric Ervin	Exonuclease enabled DNA sequencing	
2:40 PM	Aaron Nagel	Immobilized exonuclease-mediated single-molecule sequencing using polymer-derived nanosensor arrays	
2:50 PM	Kalim Mir	Super-resolution sequencing	
3:00 PM	Mark Pratt	Novel high throughput sequencing platform	
3:10 PM	Break		
	Genome & Sequencing Tech Awards		Chair: Kian Hong Kock
3:40 PM	Kenneth Shepard	Toward single-molecule diagnostics with solid-state nanopores at bandwidths in excess of 10 MHz	
3:57 PM	Prashant Mali	Towards enabling improved human genome interpretation via a new biological model system	
4:14 PM	Chongyuan Luo	Multi-omic analysis of single cells	
4:31 PM	Chang Lu	Drop-BS: High-throughput single-cell bisulfite sequencing on a microfluidic droplet platform	
4:48 PM	Laurent Menard	Nanofluidic platforms for single-molecule characterization of genomic DNA	
5:05 PM	Break before Student & Post-doc Reception		
5:40 PM	Student & Post-doc Session (with light dinner): Career Transitions and Challenges Location: McLeod Suites, 318-320, Curry Student Center		Moderators: Kristin Gabriel, Chongyuan Luo, Ning Zhang, Logan Mulroney, Avtar Singh, Joshua Weinstein

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Friday, May 31 – Open Meeting Day

7:30 AM	Breakfast	
8:30 AM	Open Meeting Welcome	Mike Smith and Carolyn Hutter (NHGRI)
	Plenary Session	Chair: David Feldman
8:45 AM	Karen Miga	Telomere-to-telomere assembly of a complete human X chromosome
9:10 AM	Philip Collins	Single-molecule electronic measurements of DNA polymerases
9:35 AM	Anna Pyle	An ultra-processive RT for monitoring sequence and structural variation in long, structured RNA templates
10:00 AM	Fei Chen	Slide-Seq: A Scalable Technology for Measuring Genome-Wide Expression at High Spatial Resolution
10:25 AM	Break	
11:00 AM	Anastasia Wise	Genomic Medicine: Technology Today and Challenges for Tomorrow
11:25 AM	Grantee Meeting Feedback	
11:40 AM	Lightning Poster Preview: Gabriel (pg. 66), Nelson (81) & Turvey (74)	Chair: Meni Wanunu
12:00 PM	Poster Session & Lunch	Main meeting room
1:00 PM	NHGRI Strategic Planning Session	
	Background & Introduction , Carolyn Hutter, NHGRI (20 mins) Nucleic Acid Technologies , Jens Gundlach, John Nelson, Winston Timp, Anna Pyle (20 mins) Chromatin Structure & Gene Regulation , Jason Buenrostro, Julia Zeitlinger, Joshua Weinstein, Mary Jelinek (20 mins) Functional Genomics , Rob Mitra, Paul Blainey, Joseph Ecker (20 mins) Wrap-up , Mike Smith, NHGRI (10 mins)	
3:00 PM	Break	
	Genome & Sequencing Tech Awards	Chair: Fatemeh Farhangdoust
3:30 PM	Karine Choquet	Exploring RNA splicing regulation with direct sequencing of nascent RNA
3:45 PM	Kyle Briggs	Advancing solid-state nanopores for nucleic acid analysis: tackling challenges in fabrication, capture and passage
4:00 PM	Siddarth Selvaraj	Arima-HiC: A platform technology accelerating the understanding of genome sequence and structure
4:15 PM	Mackenzie Turvey	Single-molecule activity of TAQ polymerase at 72 °C
4:30 PM	<i>Meeting Adjourns</i>	

End of meeting